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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/327,266 | 06/07/1999 | ROE-HOAN YOON | MCT-2 | 5252 |

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EXAMINER

HRUSKOCI, PETER A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1724

DATE MAILED: 08/07/2002

19

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-19

Office Action Summary

Applicant(s)

09/327,266

Applicant(s)

YOON, ROE-HOAN

Examiner

Peter A. Hruskoci

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4-3, 6-17, and 6-18-02.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 8-15, 18, 19, 22, 25-27, 30-32, 35, 36 and 39-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-15, 18, 19, 22, 25-27, 30-32, 35, 36 and 39-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 13, 18.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 8-11, 13-15, 67-69, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. 5,670,056. Yoon et al. disclose (see col. 2 line 21 through col. 6 line 32) a process for dewatering a slurry of fine particulate material substantially as claimed. The claims differ from Yoon et al. by reciting specific steps for increasing the hydrophobicity of the particulate material. It is submitted that the addition of a combination of non-ionic surfactants and hydrophobic polymers as disclosed in Yoon et al. would appear to increase the hydrophobicity of the particulate material as in the instant process. It would have been obvious to one skilled in the art to modify the process of Yoon et al. by utilizing the recited steps for increasing the hydrophobicity of the particulate material, to aid in dewatering the slurry. With regard to claim 67, it is submitted that the coal dewatered in Yoon et al. appears to be hydrophobic.

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3. Claims 12 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. as applied above, and further in view of Wang et al. 4,210,531. The claims differ from Yoon et al. by reciting that the surfactant is blended with a specific oil. Wang et al. disclose (see col. 2 line 27 through col. 4 line 24) that it is known in the art to utilize a combination of surfactant and the recited oils, to aid in dewatering mineral slurry concentrates. It would have been obvious to one skilled in the art to modify the process of Yoon et al. by utilizing a surfactant blended with the recited oils in view of the teachings of Wang et al., to aid in dewatering the slurry.

4. Claims 18, 19, 22, 39-41, and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. as applied above, and further in view of Sanner. The claims differ from Yoon et al. by reciting a step for adding an electrolyte to the slurry. Sanner disclose (see col. 3 lines 19-34) that it is known in the art to add an electrolyte such as aluminum sulfate to a clay slurry to aid in dewatering the clay slurry. It would have been obvious to one skilled in the art to modify the process of Yoon et al. by adding the recited electrolyte to the slurry in view of the teachings of Sanner, to aid in dewatering the slurry.

5. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. and Sanner as applied above, and further in view of Wang et al. 4,210,531. The claim differs from the references as applied above, by reciting that the surfactant is blended

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with a specific oil. Wang et al. disclose (see col. 2 line 27 through col. 4 line 24) that it is known in the art to utilize a combination of surfactant and the recited oils, to aid in dewatering mineral slurry concentrates. It would have been obvious to one skilled in the

art to modify the references as applied above by utilizing a surfactant blended with the recited oils in view of the teachings of Wang et al., to aid in dewatering the slurry.

6. Claims 25-27, 46-48, and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. as applied above, and further in view of Sun. The claims differ from Yoon et al. by reciting that the filter cake is subjected to a vibratory means. Sun disclose (see col. 1 line 12 through col. 2 line 64) that it is known in the art to subject a filter cake to a vibratory means, to aid in removing moisture from the filter cake. It would have been obvious to one skilled in the art to modify the process of Yoon et al. by utilizing the recited vibratory means in view of the teachings of Sun, to aid in removing moisture from the filter cake.

7. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. and Sun as applied above, and further in view of Wang et al. 4,210,531. The claim differs from the references as applied above, by reciting that the surfactant is blended with a specific oil. Wang et al. disclose (see col. 2 line 27 through col. 4 line 24) that it is known in the art to utilize a combination of surfactant and the recited oils, to aid in dewatering mineral slurry concentrates. It would have been obvious to one skilled in the

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art to modify the references as applied above by utilizing a surfactant blended with the recited oils in view of the teachings of Wang et al., to aid in dewatering the slurry.

8. Claims 30-32, 53-55, and 57-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. as applied above, and further in view of Kenney 5,346,630.

The claim differs from Yoon et al. by reciting that a surface tension lowering reagent is added to a filter cake in the form of a mist or spray. Kenney disclose (see col. 4 lines 1-61) that it is known in the art to spray a filter cake with a surface tension lowering reagent to aid in dewatering a coal slurry. It would have been obvious to one skilled in the art to modify the process of Yoon et al. by adding the recited reagent to the filter cake in the form of a spray in view of the teachings of Wang et al., to aid in dewatering the slurry.

9. from the filter cake and dewatering the slurry.

10. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. and Kenney as applied above, and further in view of Wang et al. 4,210,531. The claim differs from the references as applied above, by reciting that the surfactant is blended with a specific oil. Wang et al. disclose (see col. 2 line 27 through col. 4 line 24) that it is known in the art to utilize a combination of surfactant and the recited oils, to aid in dewatering mineral slurry concentrates. It would have been obvious to one skilled in the art to modify the references as applied above by utilizing a surfactant blended with the recited oils in view of the teachings of Wang et al., to aid in dewatering the slurry.

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11. Claims 35, 36, 60-62, and 64-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al. in view of Sanner as applied above, and further in view of Sun and Kenney 5,346,630. The claims differ from the references as applied above by reciting that the filter cake is subjected to a vibratory means, and that a surface tension lowering reagent is added to a filter cake in the form of a mist or spray. Sun disclose (see col. 1 line 12 through col. 2 line 64) that it is known in the art to subject a filter cake to a vibratory means, to aid in removing moisture from the filter cake. Kenney disclose (see col. 4 lines 1-61) that it is known in the art to spray a filter cake with a surface tension lowering reagent to aid in dewatering a coal slurry. It would have been obvious to one skilled in the art to modify the references as applied above, by utilizing the recited vibratory means and by adding the recited reagent to the filter cake in the form of a spray in view of the teachings of Sun and Kenney respectively, to aid in removing moisture from the filter cake and dewatering the slurry.

12. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al., Sanner, Sun, and Kenney as applied above, and further in view of Wang et al. 4,210,531. The claim differs from the references as applied above, by reciting that the surfactant is blended with a specific oil. Wang et al. disclose (see col. 2 line 27 through col. 4 line 24) that it is known in the art to utilize a combination of surfactant and the recited oils, to aid in dewatering mineral slurry concentrates. It would have been obvious

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to one skilled in the art to modify the references as applied above by utilizing a surfactant blended with the recited oils in view of the teachings of Wang et al., to aid in dewatering the slurry.

13. Applicant argues that Yoon et al. teaches a single-step hydrophobization and is devoid of any teaching or suggestion of a process including first and second hydrophobization steps, wherein the second step includes use of a nonionic surfactant. It is submitted that the addition of a combination of non-ionic surfactants and hydrophobic polymers as disclosed in Yoon et al. would appear to suggest that these materials could be added in a two-step hydrophobization, and increase the hydrophobicity of the particulate material as in the instant process.

14. Applicant argues that the nonionic low HLB surfactant required by claim 1 is hydrophobic, and therefore substantially water insoluble, and the reagent used in Yoon et al. must be water soluble or water dispersible. It is submitted that the nonionic surfactant recited in claim 1 is considered patentably indistinguishable from the low HLB nonionic surfactants disclosed in Yoon et al.

15. Applicant's citation of case law has been carefully considered but is not deemed pertinent due to the different circumstances involved in the instant application.

16. Applicant alleges that the combination of an inorganic electrolyte, or vibration of the filter cake with the claimed nonionic surfactant produces synergistic effects as shown

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Examples 15, 16, and 17, respectively. These Examples have been carefully considered but fail to overcome the above rejections. It is submitted that the specific test conditions utilized to produce the results shown in these Examples are not commensurate with the

scope of the instant claims. It is noted that these conditions included the use of specific surfactants and electrolytes in the dewatering of a coal slurry, respectively.

17. Applicant argues that Kenney utilizes a torpedo-spray system, and claim 30 requires that the spray is made in air. It is submitted that Kenney is not limited to a specific spray system and includes a fan spray as noted in col. 9 lines 1-15.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the


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advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter A. Hruskoci whose telephone number is (703) 308-3839. The examiner can normally be reached on Monday through Friday from 6:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. David Simmons, can be reached on (703) 308-1972. The fax phone number for this Group is (703) 872-9310 (non-after finals) and 703-872-9311 after finals.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.


Peter A. Hruskoci
Primary Examiner
Art Unit 1724

P. Hruskoci
August 6, 2002